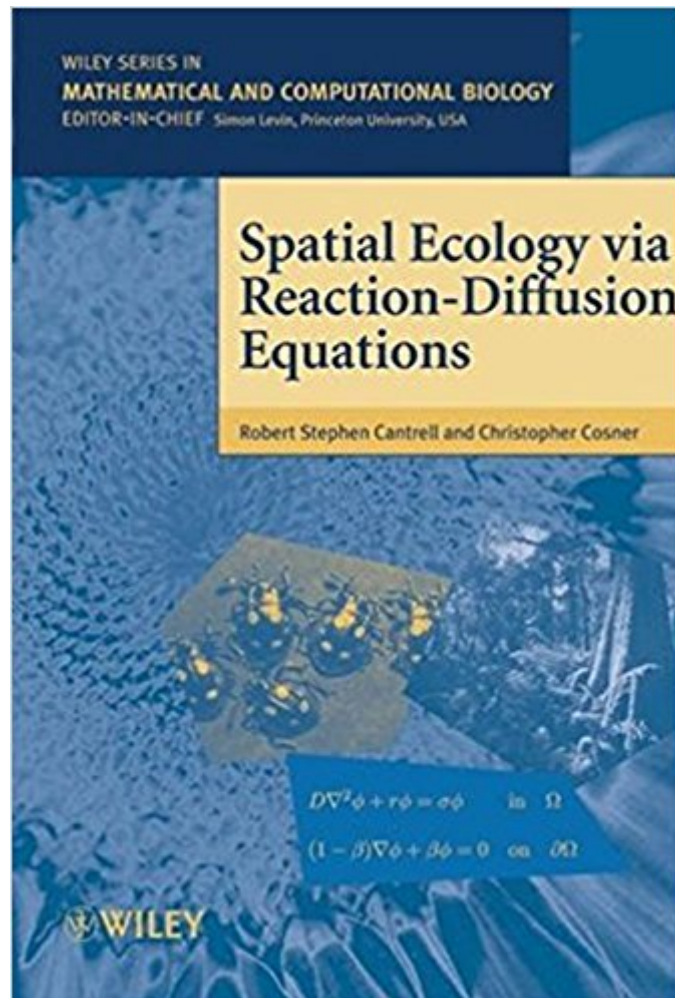




The book was found

Spatial Ecology Via Reaction-Diffusion Equations



Synopsis

Many ecological phenomena may be modelled using apparently random processes involving space (and possibly time). Such phenomena are classified as spatial in their nature and include all aspects of pollution. This book addresses the problem of modelling spatial effects in ecology and population dynamics using reaction-diffusion models. * Rapidly expanding area of research for biologists and applied mathematicians * Provides a unified and coherent account of methods developed to study spatial ecology via reaction-diffusion models * Provides the reader with the tools needed to construct and interpret models * Offers specific applications of both the models and the methods * Authors have played a dominant role in the field for years Essential reading for graduate students and researchers working with spatial modelling from mathematics, statistics, ecology, geography and biology.

Book Information

Hardcover: 428 pages

Publisher: Wiley (November 7, 2003)

Language: English

ISBN-10: 0471493015

ISBN-13: 978-0471493013

Product Dimensions: 6.9 x 1.1 x 9.9 inches

Shipping Weight: 2 pounds (View shipping rates and policies)

Average Customer Review: 5.0 out of 5 stars 1 customer review

Best Sellers Rank: #1,717,446 in Books (See Top 100 in Books) #58 in [Books > Science & Math > Mathematics > Applied > Biomathematics](#) #1253 in [Books > Textbooks > Science & Mathematics > Biology & Life Sciences > Ecology](#) #4822 in [Books > Science & Math > Biological Sciences > Ecology](#)

Customer Reviews

"...particularly attractive and useful for graduate students and other researchers who are interested in studying applications of reaction-diffusion theory to spatial ecology." (Mathematical Reviews, Issue 2007a) "...I would recommend this book to anyone who wants a well supported journey into the modern theory of partial differential equations and dynamic systems..." (The Mathematical Gazette, March 2005)

Many ecological phenomena involve space as well as time and arise from a combination of random

and deterministic processes. Such phenomena include the effects of habitat fragmentation, which is a common result of human activity and a major problem in biological conservation.

Reaction-diffusion models provide one approach to describing how random movements and deterministic interactions between individuals combine to influence the dynamics of populations and the structure of ecological communities. *Spatial Ecology via Reaction-Diffusion Equations* addresses the problem of modeling spatial effects in ecology and population dynamics using reaction-diffusion models. Provides broad coverage of a rapidly expanding area of research for ecologists and applied mathematicians. Provides a unified and coherent account of methods developed to study spatial ecology via reaction-diffusion models. Provides the reader with the tools needed to construct and interpret models. Includes specific applications of both the models and the methods described. *Spatial Ecology via Reaction-Diffusion Equations* provides a practical introduction to the subject for graduate students and researchers working in spatial modeling from mathematics, statistics, ecology, geography and biology.

Several authors have previously approached the subject of spatial population dispersal via reaction-diffusion partial differential equations, but not in the way Mrs. Cantrell and Cosner have achieved in this excellent text. In fact this is the second volume I buy, since I made the mistake of lending my previous copy to another equally enthusiastic admirer who then refused to return my first copy. and how can I blame him?

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